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CITY OF WILMINGTON NORTH CAROLINA

Citizen Questions Related to the 7/1/05 Hewlett's Creek Sewage Spill

1. What happened?

On July 1, a portion of the 24-inch waste water main pipeline that feeds into the Southside Waste Water Treatment Plan failed, resulting in a spill of approximately 3 million gallons of waste water into Hewlett's Creek.

Initially, the city tried to make the repair with a cast iron sleeve, but it could not be made to fit properly without delaying the repair another 6-8 hours. At that time, a band-type coupling was installed with the intent to perform a follow-up inspection and repair as needed under more controlled circumstances. That follow-up work is now underway.

2. Why did it take a call to 911 for the city to learn of the spill? Should the city have had a mechanism in place to detect it? Do other cities have these mechanisms?

The City implemented a computer monitoring and control system for its 31 sewer pumping stations and 2 treatment plants in 2000 at a construction cost of $1.5 million. The system monitors the typical events encountered in sewer systems such as loss of power and pump failure. If an event occurs, an alarm is transmitted electronically to the treatment plant control room and automatically printed for the operator on duty. Flow quantity entering the treatment plant is also metered. The system was not designed to send alarms for low flow conditions. Other cities in North Carolina that we are familiar with utilize similar alarm and control systems. As a result of this incident, the city has just added a low flow alarm to the system that is being refined, but is in operation.

3. Does the city have a specific, written plan in place for large leaks?

Procedures are in place for responding to sewer spills. All sewer spills, regardless of size, are treated as a top priority. The North Carolina Division of Water Quality has specific guidelines for reporting sanitary sewer overflows and these guidelines were followed. The City maintains a 24-hour emergency number, 341-7884, has staff and equipment on standby 24/7, maintains an extensive inventory of repair parts and has emergency contacts with local contractors and suppliers if outside assistance is needed.

4. Exactly how long did raw sewage leak from the system? Could the city have acted differently to prevent so much sewage from escaping?

Our flow records indicate that the leak lasted 17.5 hours between 5:00 AM and 10:30 PM. Ultimately, the pump station had to be turned off to make the repair. This decision was made at 10:00 AM. In hindsight, we should have made this decision one hour earlier, which would have allowed the excavation work to begin that much sooner and the repair to be completed one hour earlier.

5. **Why did the first city press release go out at 1 p.m., hours after the city learned of the spill? Should the city have been more aggressive in warning swimmers and boaters who used the area after the spill?**

The City followed the regulatory requirements in reporting the spill, notifying the NC Division of Water Quality. TV news media were on site at approximately 8:30 AM and began to get the word out. The City PIO was in communication with the various news media most of the morning. Official closing of waters for swimming and shellfishing falls under the NC Department of Environmental and Natural Resources' NCDENR) Recreational Water Quality Program. In the future, the city will send out a general notice earlier and assist NCDENR in disseminating their advisories.

6. **Was there any indication before July 1 that this was possible?**

The city had no indication that the pipe was about to fail.

7. **How much did it cost to fix this leak? How much will it cost longer term for the projects to address this problem? Where will those funds come from?**

The actual construction repair costs were approximately $3,500. This does not include the cost of other staff involved in manually controlling the pump stations during the repair or the cost of environmental monitoring. There will be additional cost in a follow up inspection and evaluation of the repair. The long-term project of constructing a second pipe line to the Southside Treatment plant is estimated to cost between $5 million and $7 million. $5.25 million was anticipated in the 2009-2010 Capital Improvement Budget. We will recommend that this project be accelerated. Funds would come from the city's Public Utility Fund.

8. **If this happened again today, what would the city do differently?**

We would issue a formal press release earlier and engage the city's incident command system. Additionally, the city would assist the NCDENR in getting the word out about water quality advisories through the city's distribution channels, and notify the New Hanover County Health Dept sooner.

9. **What measures does the City have in place to prevent this from happening again?**

While no measures can provide absolute guarantees against another pipeline failure, we do have current and proposed measures to greatly reduce the risk. We have preventive measures in place now such as high water alarm, pump and power failure alarms, redundant pumps, spill control berm, daily pump station inspection and computerized maintenance management. Other measures being considered include follow-up inspection and evaluation of the recent repair, alarm system modifications and pipeline redundancy. The alarm system modification can be implemented fairly quickly. Pipeline redundancy will be a longer term project.

10. How will I know when the waters in my area will be open?
The State Department of Environment and Natural Resources will continue to issue advisories about water quality via TV, radio and newspaper. Also, citizens can access the state contact the N.C. Department of Environment and Natural Resources at:
(252) 726-6828 (Advisories about swimming, fishing)
(910) 796-7215 (Water quality testing?)
For more information about N.C. coastal recreational water quality advisories, visit: http://www.deh.enr.state.nc.us/shellfish/Water_Monitoring/RWQweb/home.htm.

11. Was this a failure of a prior "patch," i.e. a collar used to cure a prior failure? If so, what were or are the details of the most recent repair?
This was not a failure of a prior patch. The coupling that failed was installed in 1992 as part of the installation of a device called a pigging port that is used to help clean the pipeline.

12. Why are pumps placed so close to the water?
The wastewater system is primarily gravity based allowing the fluids to naturally flow from highest to lowest elevations. Pump stations are placed at the lowest terrain in order to strategically boost the flow back up hill, reduce the number of stations needed to move the fluids to their destination for treatment.

13. Why was effluent pumped into the creek versus being tanker trucked off?
The flow was too great and the logistics too complicated to use tankers to move the effluent. We had to fix the leak as quickly as possible.

14. Why did the clamp failed?
We do not know. The clamp was installed in 1992. We are having it tested to see if a specific cause can be determined.

15. Is the clamp the weakest link in the system?
In this case, the clamp was obviously the weakest link since that is where the failure occurred. We propose to install a cast iron sleeve in the near future which will be as strong or stronger than the rest of the system.

16. Will the sampling area related to this overflow be broadened?
Shellfish Sanitation is responsible for sampling all of the State's waters. This sampling does include a broader area.

17. What is the impact of the spill to human health?
County Department of Health reports that monitoring has been done and there has been no increase in viruses to humans reported.

18. Are upgrades being made to pump stations to upgrade quality and capacity?
Yes

19. Will the City consider establishing a citizen advisory board to advise on wastewater issues?

Yes, this suggestion will be considered.

20. Can life be planted back into the creek?

The life will return and replenish itself in time.

21. What are the long-term impacts of this spill on water quality?

UNCW Professor Michael Mallin says overall water quality should be back to normal within a couple of months, but that he can't anticipate how the spill will affect marine life at the bottom of Hewletts Creek.

22. Why wasn't emergency response system alerted?

Officials were initially unaware of the magnitude of the problem. One of the lessons learned from this incident was the need to implement an incident command center early on, which would have included an activation of the emergency response system.

23. Will there be upgrades made to other pump stations and/or pipes in addition to Hewletts Creek?

Yes, the City's Capital Improvement Program includes upgrades to other pump stations and rehabilitation of pipelines.

24. How does this spill compare to others that have occurred in North Carolina?

UNCW Professor Michael Mallin says this is the 3rd largest he is aware of in the 12 years he has been here? DWQ Ed Beck said other municipal governments have had spills of comparable size.

25. Will the DWQ report be available to the public?

Yes, the report is public information; copies will be available for review at City Hall.

26. What would be involved in getting an additional pipeline for this pump station? How much would it cost? How long would it take?

Getting a design, the necessary permits and construction bids would take at least two years. Also, easements to provide access to individual properties will be necessary to lay the pipe.

27. How will we (citizens and homeowners) know that everything is back to normal?

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